

1 ZOO NOTIC AND VECTOR-BORNE DISEASES

a Rabies post-exposure prophylaxis in previously-immunised persons

A veterinary surgeon in Mpumalanga Province was bitten by a dog that was later proven to be infected with rabies. The vet consulted the NICD for advice regarding post-exposure prophylaxis. The vet had received a 3-dose rabies vaccination schedule some years prior to the event, and a booster one week prior to being bitten as part of World Rabies Day activities

Rabies pre-exposure prophylaxis (PrEP) is recommended for persons who are at continual or frequent risk of exposure to rabies virus infection. This includes persons who are at risk due to their occupations, such as veterinary practitioners and their practice staff, veterinary officials, animal welfare organisation staff, and laboratory personnel. PrEP is increasingly being prescribed for travellers to high-risk countries. The vaccination schedule for PrEP is shown in Table 1 below.

In addition to PrEP, routine monitoring of rabies virus neutralising antibodies (RVNA) of personnel at risk of exposure is recommended. Monitoring may be every 6 months or 2 years depending on occupational risk of rabies exposure. Boosters should be administered if RVNA titre falls below 0.5 IU/ml (or equivalent titre depending on local test used). RVNA titres can be determined at least 14 days after the third dose of the PrEP regimen (day 28). Periodic boosters are recommended as an extra precaution for individuals whose occupation puts them at continual risk of exposure. Booster vaccination results in a faster immunologic response when compared to immune response after primary

vaccination, and a booster injection at 1 year provides long-term sero-conversion.

If routine RVNA monitoring is unavailable, booster immunisation against rabies should take place intermittently, the frequency of which has been somewhat arbitrarily determined. Recommendations range from an annual booster, to boosting every 3 to 5 years.

In line with current guidelines, the vet in the encounter above, was advised to have a single dose of rabies vaccine into the deltoid muscle on each of day 0 and day 3. No rabies immunoglobulin is required for persons who have been previously vaccinated, as circulating antibody levels are sufficiently high to neutralise rabies virus. This vet was fortunate enough to have received a booster a week prior to the incident, and his antibody levels at the time of the bite were measured and found to be adequate

References: WHO | Current strategies for human rabies pre and post-exposure prophylaxis.

http://www.who.int/rabies/human/WHO_strategy_prepost_exposure/en/.

Accessed October 15, 2015.

Source: Division of Public Health Surveillance and Response, NICD-NHLS

Table 1. Recommended rabies pre-and post-exposure prophylactic immunisation schedule.

Pre-exposure prophylaxis			Post-exposure prophylaxis for previously immunised persons		
Day of administration of rabies vaccine	Site and mode of administration	Dose	Day of administration of rabies vaccine	Site and mode of administration	Dose
0*	Deltoid muscle, intramuscular	As specified by vaccine manufacturer	0 [#]	Deltoid muscle, intramuscular	As specified by vaccine manufacturer
7			3		
21 or 28			Rabies immunoglobulin	Not required	
Booster	Every 3-5 years, depending on antibody levels				

*Day 0 is the date on which vaccination commences

[#]Day 0 is the day on which rabies exposure occurred. Previously immunised persons who do not present on the day of exposure should still receive two doses of rabies vaccine, day 0 being day of presentation.